## Amendments to the Claims

1-17. (Cancel)

18. (New) An electrochemical machining apparatus comprising:

an anode for machining a workpiece;

a workpiece holding portion for holding the workpiece as a cathode so as to form a predetermined space between the workpiece and said anode;

a catalyst disposed between the workpiece and said anode for dissociating water molecules into hydrogen ions and hydroxide ions;

an ultrapure water supply unit for supplying ultrapure water between said anode and the workpiece; and

a power source for applying a voltage between the workpiece and said anode.

19. (New) The electrochemical machining apparatus as recited in claim 18, further comprising a moving mechanism for relatively moving the workpiece and said anode while the voltage is applied by said power source.

20. (New) The electrochemical machining apparatus as recited in claim 18, wherein said catalyst comprises a basic anion exchange group.

21. (New) The electrochemical machining apparatus as recited in claim 18, wherein said catalyst comprises an acidic cation exchange group.

22. (New) An electrochemical machining apparatus comprising:

a machining electrode for machining a workpiece;

a workpiece holding portion for holding the workpiece to form a predetermined space between said machining electrode and the workpiece;

a catalyst disposed between said machining electrode and the workpiece for dissociating water molecules into hydrogen ions and hydroxide ions;

a power source for applying a voltage between said machining electrode and the workpiece; and

an ultrapure water supply unit for supplying ultrapure water between said machining electrode and the workpiece while said machining electrode is being rotated,

wherein said machining electrode has a rotating shaft parallel to a surface of the workpiece.

23. (New) An electrochemical machining apparatus comprising:

a machining electrode for machining a workpiece;

a workpiece holding portion for holding the workpiece so as to form a predetermined space between said machining electrode and the workpiece;

a catalyst disposed between said machining electrode and the workpiece for dissociating water molecules into hydrogen ions and hydroxide ions; and

a power source for applying a voltage between said machining electrode and the workpiece,

wherein one of said machining electrode and the workpiece held by said workpiece holding portion is rotated while said catalyst and the workpiece are brought into line contact with each other.

24. (New) The electrochemical machining apparatus as recited in claim 23, wherein said machining electrode has a rotating shaft parallel to a surface of the workpiece.

25. (New) An electrochemical machining apparatus comprising:

a machining electrode for machining a workpiece;

a workpiece holding portion for holding the workpiece so as to form a predetermined space between said machining electrode and the workpiece;

a catalyst disposed between said machining electrode and the workpiece for dissociating water molecules into hydrogen ions and hydroxide ions; and

a power source for applying a voltage between said machining electrode and the workpiece,

wherein one of said machining electrode and the workpiece held by said workpiece holding portion is rotated while said catalyst and the workpiece are brought into point contact with each other.

26. (New) The electrochemical machining apparatus as recited in claim 25, wherein said machining electrode has a rotating shaft parallel to a surface of the workpiece.

27. (New) An electrochemical machining apparatus comprising:

a machining electrode for machining a workpiece;

a workpiece holding portion for holding the workpiece;

a catalyst disposed between said machining electrode and the workpiece for dissociating water molecules into hydrogen ions and hydroxide ions;

a power source for applying a voltage between said machining electrode and the workpiece; and

an ultrapure water supply nozzle for supplying high pressure ultrapure water between said machining electrode and the workpiece from the upstream side of a direction of rotation of at least one of said machining electrode and the workpiece in such a manner that the high pressure ultrapure water is revolved while at least one of said machining electrode and the workpiece held by said workpiece holding portion is being rotated.

28. (New) The electrochemical machining apparatus as recited in claim 27, wherein the high pressure ultrapure water is passed through said catalyst.

29. (New) The electrochemical machining apparatus as recited in claim 27, wherein said catalyst comprises a nonwoven fabric having an ion exchange function.

30. (New) The electrochemical machining apparatus as recited in claim 27, wherein said catalyst comprises a strongly basic anion exchange group.

31. (New) The electrochemical machining apparatus as recited in claim 27, wherein said catalyst comprises a strongly acidic cation exchange group.

32. (New) The electrochemical machining apparatus as recited in claim 27, wherein said catalyst is mounted on said machining electrode.

33. (New) The electrochemical machining apparatus as recited in claim 27, wherein said catalyst is brought into contact with the workpiece during a machining process.

34. (New) The electrochemical machining apparatus as recited in claim 27, wherein said machining electrode has a rotating shaft parallel to a surface of the workpiece.